Industrial Engineering Letters
ISSN 2224-6096 (Paper) ISSN 2225-0581 (online)
Vol.5, No.11, 2015

Critical Success Factors for IT Projects in the Telecom Sector

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Abstract
This research is undertaken to address the critical issue of the high failure rate in IT Projects. The study is focused on the IT Projects in the Telecom Sector. The main reasons for the failure of the IT Projects are studied and then the corresponding success factors analyzed. After in depth study and analysis certain Critical Success Factors for the success of IT Projects in the Telecom Sector are proposed. A theoretical framework model has been developed to test the effect of the various variables on the successful completion of IT Projects in the Telecom Industry. The results and findings from the research will greatly benefit the Telecom industry in successfully completing their IT Projects and deploying their IT infrastructure.
Keywords: Project Scope (PS), Top Management Support (TMS), Skilled & Competent Project Team (SCPT), Project Manager's Leadership Qualities (PMLQ) and Information Technology Project Success (ITPS).

1. Introduction

The literature describes many horror stories associated with the failure of large IT projects. Severe time and cost-over runs have been found to be a common case in most of the projects. The projects have been found to be lagging behind schedule and exceeding the approved budget. Many projects have altogether been abandoned after suffering from these problems (Hartman & Ashrafi, 2002). Most commonly reported causes include: Misunderstood requirements resulting due to Poor Scope definition (Lane ,Palko and Cronan, 1994), optimistic budget and schedule (Martin, J.E, 1994)unclear project charter (Lavence, 1996) .

The high failure rate of IT projects requires a better understanding of its critical success factors. To obtain the broader picture the critical success factors for projects in different industries are studied. Research by authors on the Critical Success Factors (CSF's) for Information & Communication Technology projects and the work related to Enterprise Resource Planning (ERP) implementation in industries are reviewed. The pioneering research in determining the success criteria or the CSF's which was carried out identified 10 critical success factors.

They included clear project scope, top management support, detailed project plan/schedule, frequent and high client consultation, complete project team/personnel, availability of technical task force, high customer/client consultation, frequent monitoring & feedback, efficient & effective communication and troubleshooting capabilities of the project team. All the mentioned variables were positively related to the project success (Pinto JK, Slevin, 1998).

In other studies carried out specifically related to Information systems and Information Technology industries ten CSF's were identified. The success factors included; Communication of the Project status to the owner and its approval obtained, proper communication between project team members, clearly defined project scope/mission, top management support, project business purpose, detailed project plan (including time/ schedules and milestones) with detailed budget, appropriate technology and expertise, formal change process and project completion with minimal and mutually agreed scope changes. Based on the study of the ten listed CSF's, the authors summarized their findings to clear project scope/mission, consultation with project owner/sponsor, good communication among all stakeholders and finally the availability of resources as the CSF's with the greatest impact on the successful completion of the project (Hartman& Ashrafi, 2002).

In other studies related to the success factors on projects , the authors explored the three questions; "What factors lead to project management success?", "What factors lead to a successful project?" and "What factors lead to consistently successful projects". The study of the authors was based on the research conducted on more than 70 large national and multinational companies to answer the three separate questions on the basis of which 12 CSF's were identified. The factors critical to project management success i.e. the first question were found to be eight for the on-time performance criteria (project completed on time) of project success, these included the concepts of risk management and other associated factors. For the on-cost criteria (project completed within allocated budget) of project success, two factors were identified which included a mature scope change control mechanism for any changes in the scope of the project and the maintenance of integrity for performance measurement baseline. In addition to the eight factors critical to project management success a ninth factor was found to be critical for success in individual projects; this factor was the existence of an effective benefits delivery and management process with the mutual cooperation of both the line and project management functions. Finally the factor responsible for the third question i.e. consistently successful projects was found to be effective portfolio and program management functions fully aligned with the company's corporate strategy and business objectives. The authors finally concluded that although all the 12 CSF's were not directly related with the human factor but

at the end it comes down to the people who have to deliver and not the systems, technology or equipment. All the identified factors were performed by people and thus the CSF's will only work if the people involved make them work (Cooke-Davies,T, 2002).

In studies related to the success criteria for ICT projects, the authors based their studies on the standard success criteria as identified by the Project Management Body of Knowledge (PMBOK) of the Project Management Institute (PMI). The focus was on the triple constraints of time, cost and scope. These triple constraints are widely accepted by many authors and researchers in addition to practicing project managers as the standard success criteria. If the project exceeds the time limit, if it's cost over-run the budget and if the outcomes do not satisfy the predetermined scope/specifications (project out of scope) then the project is doomed to failure. In addition to the triple constraints of time, cost and scope the other two important factors identified were, end user happiness i.e. customer satisfaction and financial/commercial success of the project. A fifth factor identified but ranked lowest in the category was that of project team happiness (Milis, K.&Vanhoof,K.(2007).

In another study conducted on the CSF's for the successful implementation of ERP systems (specialized IT projects supporting the efficient operation of an organization's business processes by integrating it's different activities like sales, marketing, accounting, manufacturing and HR practices) , 23 unique factors obtained from prior research were analyzed (Tein,D.&Wong,B., 2007). The findings of the authors included top management support, ERP consultants with good skills and knowledge, skilled and competent project team as the most vital and critical factors for success on ERP projects. The authors summed up their discussion by arriving at the conclusion that the successful implementation of ERP projects does not depend upon the improvement in technology but on properly utilizing the people skills.

2. Literature Review:

2.1 Project Scope

It is that part of the Project Planning which involves identifying and listing a specific number of project goals, features, functions, deliverables and tasks. In other words the project scope involves the work that needs to be executed in order to deliver a product or a service with accurately defined features and functions (PMBOK, Chap 5). Project scope clearly defines the boundaries of the project. Project scope definition is a critical aspect of Project Management best practices. Many large IT projects fail because the requirements are not clearly defined and are not accurate enough. The full scope of the project is thus not understood from the very start. The net result is unclear goals and hence expanding project scope.

It is imperative for project managers to ensure that the primary requirements of the project are defined early and in as much detail as possible. Poorly defined scope can also affect the other aspects of the project. The famous triple constraints of project management (Scope, Time & Cost) indicate that any change in scope will result in the change in other aspects of time and cost as well since they are dependent on the scope. "Scope Creep" which is the uncontrolled changes or continuous growth in the scope of the project is a major danger sign for projects. Major causes of Scope Creep are when the scope of the project is not well defined from the very start. It also occurs when the scope of the project is not well documented and controlled. Adding any new requirements during the course of the project can overburden the capacity of the allocated resources which can result in missed deadlines, overburdening or complete failure of the project. In a research the authors have listed ill-defined scope as a major reason for software/Information system project failure among the 10 listed and identified reasons for failure (John S.Reel, 1999).

In another study, 23 unique critical success factors were identified and analyzed for the successful completion of Enterprise Resource Planning projects. The researchers argued that the success of ERP projects does not depend on further improvements in technology, but on bringing together people to make appropriate use of technology for fulfilling the business obligations. Thus identifying the critical success factors was paramount in the success of the project. The researchers listed clear goals, focus and scope as a paramount CSF in the success of the ERP project (Tein,D.&Wong,B., 2007). The scope was chosen along with the other selected CSF's owing to the frequency of its repetition in literature. Based on the above extensive study, Project Scope definition has been selected as a critical success factor for the successful completion of IT projects.

The following hypothesis is developed as a result:

Hypothesis: Project Scope has relationship with Information Technology Project Success

Null Hypothesis: Project Scope has no relationship with Information Technology Project Success

2.2 Top management support

Top Management also called the Executive Management or the Upper Management in organizations is mainly responsible for the funding of the project. Among the many operational roles of the top management are included, selecting the right project for organizational strategy in attainment of business goals. The Top Management also plays the role of the project sponsor and supports in attaining resources for the project.

One of the key responsibilities include selecting a project manager with the required technical expertise,

management experience and interpersonal skills to successfully manage the project, provide adequate resources for the project and provide incentives to the team members. The project manager has to make sure that the specific roles and responsibilities are clear at the very start of the project.

While the Project Manager's role is to directly supervise the daily work effort by the project team members, the Top Management on the other hand is to provide overall support to the Project Manager and not to get involved in micro management.

Top Management is also required to conduct regular review meetings to ensure and monitor the progress of the project, follow up with customers to determine general customer satisfaction and finally to recognize and reward the project team members upon the successful completion of the project (Cleland, David 2004). In a research conducted by mailing survey questionnaires to CIO's of Fortune 1000 companies, the findings ranked top management support, project champion, ERP teamwork and composition, project management practices and change management program and culture as the four most important CSF's in ranking from a list of 11. The other factors included communication, business plan & mission, Business Process Relationship (BPR), software development, testing and trouble shooting, monitoring & evaluation of performance. The lowest ratings received by the CIO's for the 11 factors were for appropriate business & IT legacy systems (Wagner, Poon, 2000).

Top Management support is identified by many researchers as one of the key CSF for the successful implementation of ERP systems. The project must obtain the approval and support of the higher management. Top Management support involves the resources in the form of capital, time and human resources (Roberts&Barrar,1992). Top management support ensures the availability of resources and employee commitment towards the project. Based on the above study it is determined that top management support is essential for the success of an IT Project. The following Hypothesis is developed as a result.

Hypothesis: Top Management Support has positive association with Information Technology Project Success

Null Hypothesis: Top Management Support has no positive association with Information Technology Project Success

2.3 Skilled and competent project team

IT projects demand the inclusion of skilled and competent team members, well conversant in the current trends and practices in the IT industry in order to successfully steer the project on course. Skilled team members are extremely critical in the successful execution of IT projects. Current literature on IT projects reveal that most of the problems in the projects arise out of organizational or behavioral issues, not due to technical shortcomings (Johnston, A.K.,1995). The technical expertise of the team members thus is of no avail if their role is not appreciated and catered for.

In 10 CSF's identified by researchers in a study of six organizations through in depth interviews with the company executives; among the CSF's identified three CSF's were Competent and appropriate IT personnel, appropriate technology and management of data. The researchers argued that the IT staff must have the appropriate technical expertise to master the technologies implemented and to interact with top management when required. They must be able to handle the appropriate technology and manage data accordingly. The results emphasized that when all ten CSF's were present, the system succeeded, when they were absent, the system failed and when some factors were there and the others absent the results were inconclusive. This highlights the importance of the three CSF's identified which were all related to skilled and competent project team members (Nah, Zuckweiler, 2007)

According to a survey conducted, the role of the team members in ERP projects was highlighted, it concluded that the role of the information system implementation members was a vital one and the fourth most CSF amongst the chosen factors for information systems implementation, furthermore it emphasized the importance of empowering the team members to make decisions (Stratman&Roth,2002). In literature review it was highlighted that in order to form a strong and effective IT project team, the team members should be provided an environment which encourages productivity and minimizes distractions by providing a quite comfortable space. The team should also be equipped with the latest state of the art equipment and systems and finally the proper tools and adequate training on those tools (John S.Reel, 1999).

After reviewing the literature on the subject it is deduced that Skilled and competent IT project team is essential for success. The following hypothesis is developed on the base of the study conducted:

Hypothesis: Skilled and Competent Project Team has impact on Information Technology Project Success

Null Hypothesis: Skilled and Competent Project Team has no impact on Information Technology Project Success

2.4 Project Manager's Leadership qualities

Project Manager's leadership qualities are essential for the success of any project. In a study conducted it was found that incompetence in leadership resulted in delay in project implementation (Biehl, 2007). In another study

it was mentioned that project leaders should have the proper technical and relational skillset along with a charismatic personality to successfully steer the project towards completion (McLeod.L and S.G.MacDonnel, 2011). In a study the researchers listed 15 factors for the success of IT projects. One of the hypotheses was related to the leadership, which was found to strongly affect the success of IT projects. The researchers deduced the hypothesis but did not empirically prove it since it was out of scope of their study and hence left room for further research (Al-Mudhary, Imtiaz, Ibrahim, 2013).

The Project Management Institute commissioned certain people to conduct a research into whether the Project Manager's leadership style and competence was an important success factor on projects and whether it had a varying impact depending on the nature of the project. In their observations the researchers discovered that the literature on project success factors had largely ignored the role of the project manager, his or her competence level and leadership style, on the success of the project. The researchers concluded that due to the uniqueness, novelty and transient nature of the projects, the project manager had less of an impact on project success; however the question could only be definitively answered if the Project Manager's competence and leadership qualities could be directly measured by data analysis in any specific category of projects (Turner & Muller, 2005). The leadership style of the Project Manager as a factor in the successful implementation of IT projects has not been researched much and any research conducted has not been conclusive. It is with this intention that this criteria is also chosen for testing.

The hypothesis developed on the basis of the above discussion is as below:

Hypothesis: Project Manager's Leadership Qualities has positive impact on Information Technology Project Success

Null Hypothesis: Project Manager's Leadership Qualities has no positive impact on Information Technology Project Success

To provide uniqueness to this research, the effect of project manager's leadership qualities specifically in obtaining the top management support which ultimately results in the success of the IT project is also analyzed. The resulting hypothesis for this criterion is reproduced below:

Hypothesis: Project Manager's Leadership Qualities has positive impact on Top Management Support

Null Hypothesis: Project Manager's Leadership Qualities has no positive impact on Top Management Support

Additionally the role of the project manager's leadership qualities in selecting skilled and competent team members for handling the IT Projects is also investigated. The hypothesis developed is as below:

Hypothesis: Project Manager's Leadership Qualities has positive impact on Skilled and Competent Project Team

Null Hypothesis: Project Manager's Leadership Qualities has no positive impact on Skilled and Competent Project Team

2.5 Information Technology Project Success

As already narrated above, IT Projects have been widely reported in literature as complex and with a high failure rate. Most commonly occurring instances of IT Project failures have been cited as misunderstood requirements, which indicates poor scope definition for the project from the onset (Lane, Palko& Cronan) 1994), (Lavence, 1996). In other studies optimistic time/schedule estimations and budget have been reported (Martin, J.E.,1994).

The mismanagement of resources, the people or personnel factor being the more important factor than hardware/equipment and technology have also been widely mentioned as a main cause of failure (Johnston, 1995), (Martin, J.E.,1994), (Ward,J.A.1994). Lack of communication among stakeholders has been quoted as another major failure cause (Demery,K., 1995) and (Hartman,F., 2000). The recognition of the project failure is an important part of steering the project towards success.

In a detailed analysis by a project management expert working for IBM seven main reasons for IT project failures were mentioned. He listed poor project planning, lack of communication among stakeholders, Ineffective management, failure to align with constituents and project stakeholders, Ineffective role of Top Management, lack of skilled staff members and finally the use of poor methodology and tools. In the study it was found that 54% project failure was due to poor project management and only 3% due to the technical complexities associated with the IT project. He emphasized that it was the Project Manager's responsibility to assign the right people for the right job in order to avoid failure and ensure success (Gulla, 2012).

The in-depth study of the reasons for failure reported have revealed that most of the IT projects fail as a result of people behavior and not technology limitations. It is the handlers of the project who matter the most. They include all the project stake holders from the Top Management to the Project Manager to the team members. It also includes the customers and the end users. Having studied the causes for the failure of the projects a critical analysis can be undertaken to identify the project's success factors or the CSF's.

The pioneering research in determining the success criteria or the CSF's which was carried out identified ten critical success factors which included Clear project scope, Top management support, complete project

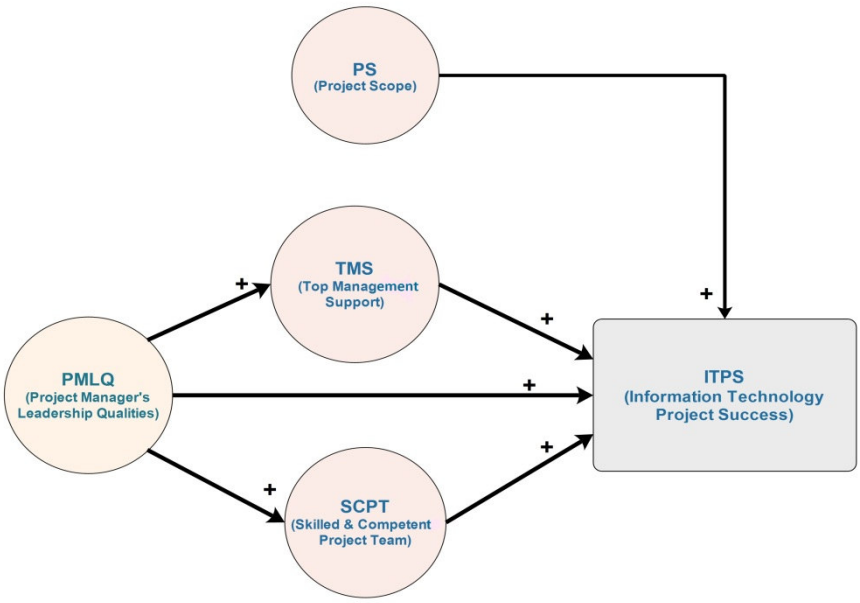
team/personnel, frequent monitoring & feedback, efficient & effective communication and troubleshooting capabilities of the project team. All the mentioned variables were positively related to the project success (Pinto & Slevin, 1988).

In other studies carried out specifically related to Information systems and Information Technology industries ten CSF's were identified. Based on the study of the ten listed CSF's, the authors summarized their findings to Clear project scope/mission, Consultation with project owner/sponsor, Good communication among all stakeholders and finally the availability of resources as the CSF's with the greatest impact on the successful completion of the project (Hartman & Ashrafi, 2002).

In another detailed research conducted, the researchers identified twelve factors as critical to the success of IT projects, in their findings, the authors finally concluded that although all the 12 CSF's were not directly related with the human factor but at the end it comes down to the people who have to deliver and not the systems, technology or equipment. All the identified factors were performed by people and thus the CSF's will only work if the people involved make them work (Cooke-Davies, T.,2002). Based on the extensive study of the subject and in reviewing the causes of failure of IT projects,

The often repeated project scope and top management support are selected for the research as CSF for the success of IT projects. In addition to the above 2 factors, a skilled and competent project team is also considered. The fourth CSF chosen is the role of the project manager. Although the role of the project manager has largely been ignored in all the literature reviewed, this criterion is chosen to test it along with the other CSF's. Additionally the leadership qualities of the PM in selecting skilled and competent team members and also in obtaining top management support to steer the project towards success is investigated. The following section presents the model thus developed for the research.

2.6 Theoretical Framework Model:



3. Research Methodology

IT project failure rate has been a major source of concern to organizations employing IT infrastructure, IT professionals and Project Managers worldwide. The critical nature of this problem has warranted many studies on the topic. Although all the researches and findings have contributed towards the improvement in the success rate but nevertheless the problem still exists. It is with this intention that this study is undertaken and an effort made to contribute towards providing a betterment and improvement. The CSF's chosen as variables are tested and the findings are explained below. There are many different methods for carrying out the research. Data collection methods include structured or unstructured interviews, questionnaires and general observation. This study has employed quantitative survey with structured questionnaires in an effort to test the theoretical framework. This survey questionnaire was either personally delivered or electronically mailed via E-Mail to the key company business and IT personnel including

Managers, IT professionals, computer operators and other people associated with IT projects. For each of the factors, a brief description of the factor and four sub questions with a 5 level rating, ranging from the scale of extremely important for success to not important for success was presented. Statistical methods for result

validation were utilized.

Research Design:

The study was carried out by using categorical survey based on the structured questionnaire on Likert scale . The survey carried out was primary data based on a representative sample of individuals from the different Telecom Operators like PTCL, UFONE, Mobilink and Telenor.

Hypotheses testing method was used for getting results. Different relationships among the variable were tested for the research result. To get the data we had distributed the questionnaire among the identified population. The questionnaire was distributed manually where possible and e-mailed electronically; 280 copies of questionnaires out of which 218 were valid, the remaining were improperly filled or the employees did not return them. The response rate was 77.9 %.

Sampling:

The population of this research included the Managers, IT professionals, computer operators and other people associated with IT projects in their respective organizations. The population base was the Telecom operators PTCL, UFONE, Mobilink and Telenor based in Islamabad, Pakistan which have implemented the ERP and other IT infrastructure development programs in their respective domains. Purposive sampling technique was utilized for the questionnaire distribution.

Development of the Questionnaire:

The questionnaire was developed for the research after the detailed literature survey which resulted in the identification and selection of the mentioned variables and their correlations. The questionnaire developed was arranged such as to get the required information valid for testing the variables. There were total 25 questions and 5 variables in the questionnaire. The questions asked did not differentiate on the base of gender.

The Pilot Study:

The finalized questionnaire was distributed among the managers, IT professionals, computer operators and the vendors involved in the IT projects on behalf of the respective organizations. The questionnaire was found valid and appropriate for the research.

Data Collection:

The data collected was Primary Data based. Structured Questionnaire based on the Likert Scale (Appendix) distributed among the identified population of the Telecom organizations. The questionnaires was personally distributed where convenient and electronically distributed via E-mail.

4. Analysis

In this chapter the data is analyzed utilizing the Statistical Package for Social Sciences (SPSS) tool. The data collected for our research from the different mentioned organizations was first tested to determine the reliability of the data.

4.1 Reliability Test:

After receiving the filled questionnaire, the data was tested and analyzed utilizing the SPSS tool for its reliability. The Cronbach's Alpha value for this research data came out to be 0.759. This indicated that the questionnaire and the data were reliable.

4.2 Regression Analysis:

Hypothesis 1: Project Manager's Leadership Qualities has positive impact on Top Management Support

Hypothesis 1o: Project Manager's Leadership Qualities has no positive impact on Top Management Support

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.175[a]	.031	.026	.38910

a. Predictors: (Constant), PMLQ

b. Dependent Variable: TMS

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.039	1	1.039	6.862	.009[a]
	Residual	32.703	216	.151		
	Total	33.742	217			

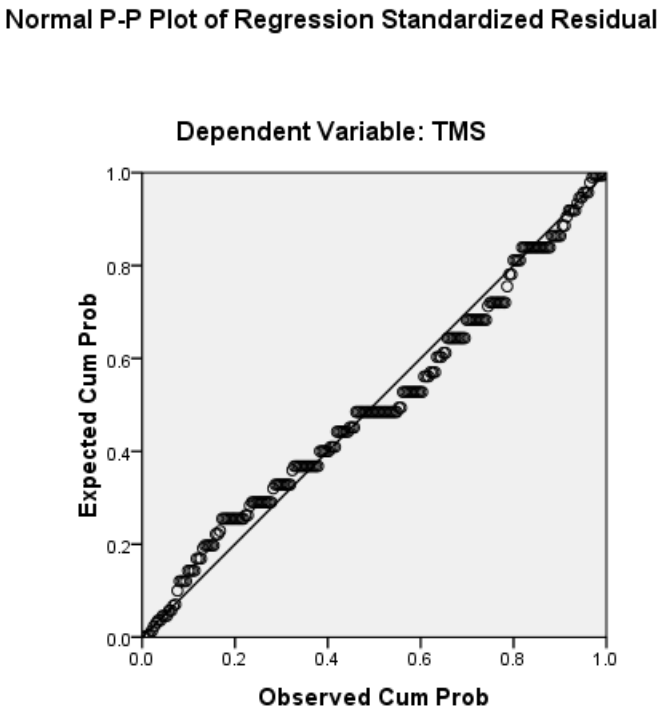
a. Predictors: (Constant), PMLQ

b. Dependent Variable: TMS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.979	.318		9.369	.000
	PMLQ	.209	.080	.175	2.620	.009

a. Dependent Variable: TMS



The above table shows the regression analysis of "Project Management Leadership Qualities has positive impact on Top Management Support". The regression analysis represents that R-square value for the relationship is R-square = 0.031, with F-statistic 6.86 and the significance value 0.009. Hence the null hypothesis is rejected and our assumption is true. Top Management Support can be predicted from Project Manager's Leadership Qualities.

Hypothesis 2: Project Manager's Leadership Qualities has positive impact on Skilled and Competent Project Team

Hypothesis 2o: Project Manager's Leadership Qualities has no positive impact on Skilled and Competent Project Team

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.118[a]	.014	.009	.39472

a. Predictors: (Constant), PMLQ

b. Dependent Variable: SCPT

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.474	1	.474	3.046	.082[a]
	Residual	33.653	216	.156		
	Total	34.128	217			

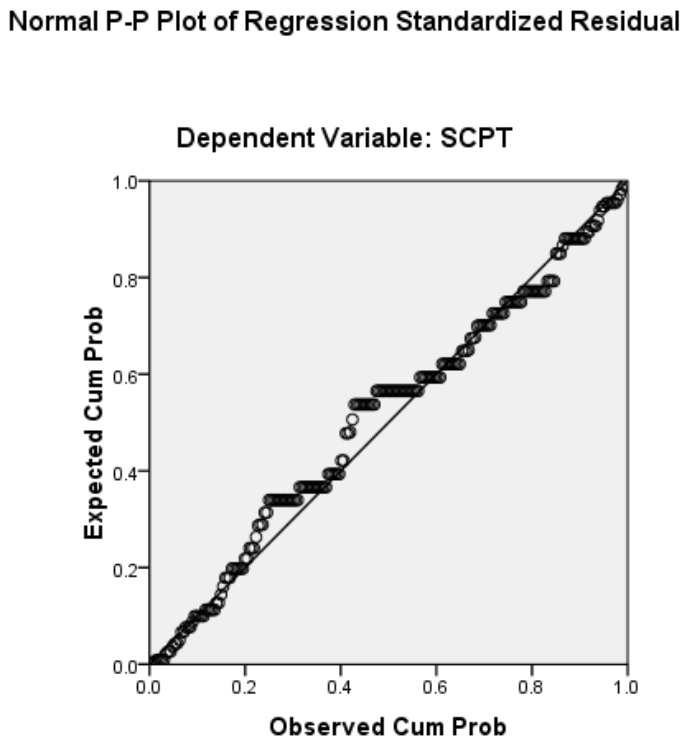
a. Predictors: (Constant), PMLQ

b. Dependent Variable: SCPT

Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.170	.323		9.828	.000
	PMLQ	.141	.081	.118	1.745	.082

a. Dependent Variable: SCPT



The above table shows the regression analysis of "Project Management Leadership Qualities has no positive impact on Skilled and Competent Project Team". The regression analysis represents that R-square value for the relationship is R-square = 0.014, with F-statistic 3.046 and the significance value 0.082. Hence the null hypothesis is accepted and our assumption is not true. Hence a Skilled and Competent Project Team cannot be predicted from Project Manager's Leadership Qualities.

Hypothesis 3: Project Scope has a positive relationship with Information Technology Project Success

Hypothesis 3o: Project Scope has no positive relationship with Information Technology Project Success

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.147[a]	.021	.017	.65024

a. Predictors: (Constant), PS

b. Dependent Variable: ITPS

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.005	1	2.005	4.743	.031[a]
	Residual	91.326	216	.423		
	Total	93.332	217			

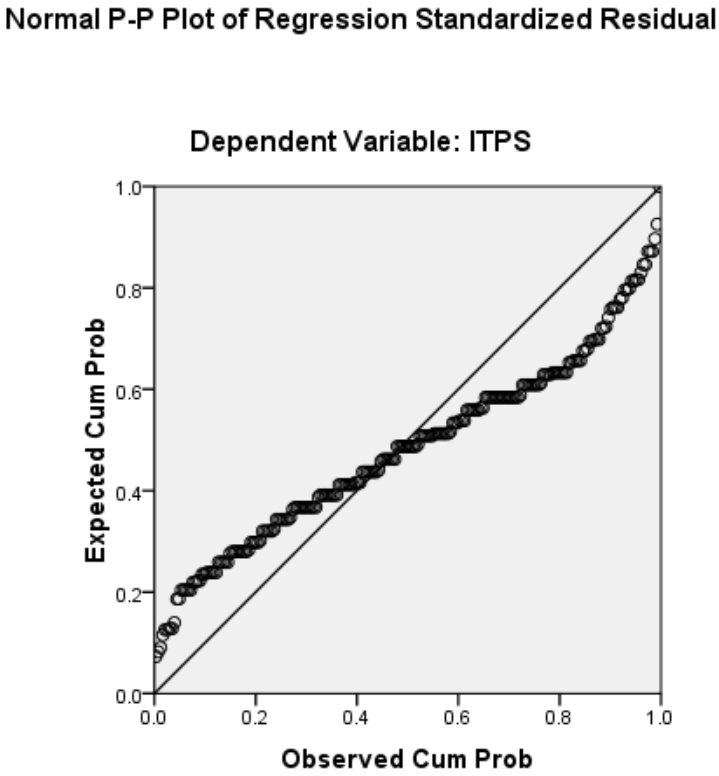
a. Predictors: (Constant), PS

b. Dependent Variable: ITPS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.234	.371		8.707	.000
	PS	.207	.095	.147	2.178	.031

a. Dependent Variable: ITPS



The above table shows the regression analysis of "Clear Project Scope has a positive impact on IT Project Success". The regression analysis represents that R-square value for the relationship is R-square = 0.021, with F-statistic 4.743 and the significance value 0.031. Therefore the null hypothesis is rejected and our assumption holds

true, hence IT Project Success can be predicted from Clear Project Scope.

Hypothesis 4: Top Management Support has positive association with Information Technology Project Success

Hypothesis 4o: Top Management Support has no positive association with Information Technology Project Success

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.081[a]	.007	.002	.65520

a. Predictors: (Constant), TMS

b. Dependent Variable: ITPS

ANOVA[b]

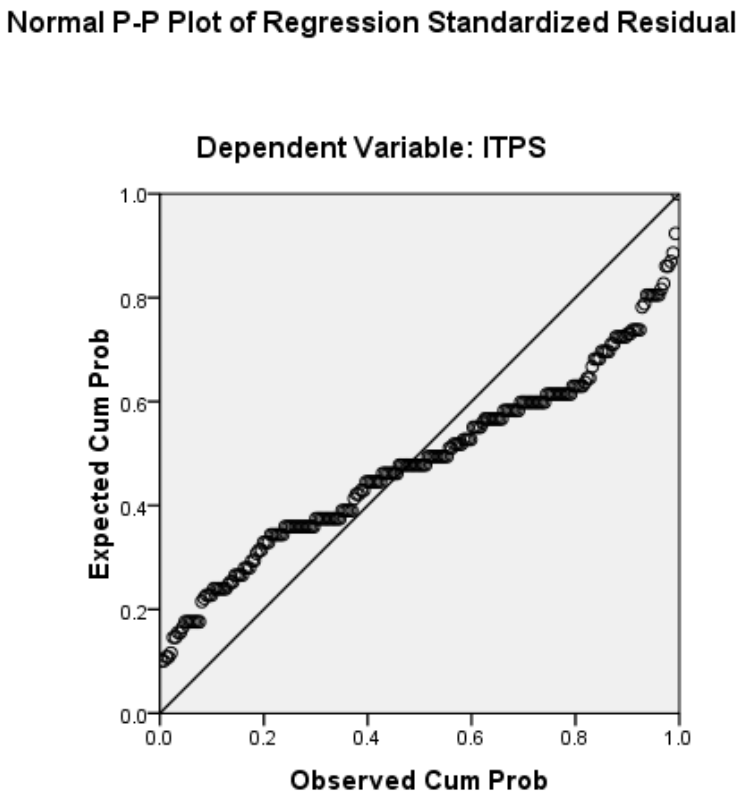
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.607	1	.607	1.413	.236[a]
	Residual	92.725	216	.429		
	Total	93.332	217			

a. Predictors: TMS (Constant),
b. Dependent Variable: ITPS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.527	.432		8.165	.000
	TMS	.134	.113	.081	1.189	.236

a. Dependent Variable: ITPS



The above table shows the regression analysis of "Top Management Support has no positive impact on IT Project Success". The regression analysis represents that R-square value for the relationship is R-square = 0.007, with F-statistic 1.413 and the significance value 0.236. Therefore the null hypothesis is accepted and our

assumption is not true. Hence IT Project Success cannot be predicted from Top Management Support.

Hypothesis 5: Skilled and Competent Project Team has impact on Information Technology Project Success

Hypothesis 5o: Skilled and Competent Project Team has no impact on Information Technology Project Success

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.321[a]	.102	.008	.65309

a. Predictors: (Constant), SCPT

b. Dependent Variable: ITPS

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.202	1	1.202	2.818	.002[a]
	Residual	92.130	216	.427		
	Total	93.332	217			

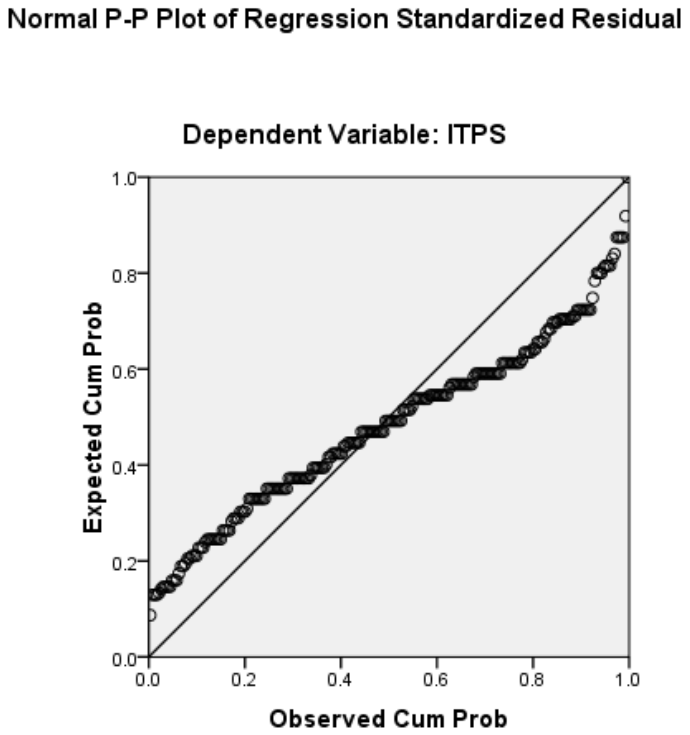
a. Predictors: (Constant), SCPT

b. Dependent Variable: ITPS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.337	.419		7.956	.000
	PMLQ	.188	.112	.113	1.679	.002

a. Dependent Variable: ITPS



The above table shows the regression analysis of "Skilled and Competent Project Team has positive impact on IT Project Success". The regression analysis represents that R-square value for the relationship is R-square = 0.102, with F-statistic 2.818 and the significance value 0.002. Hence the null hypothesis is rejected and our assumption is true, therefore the IT Project Success can be predicted from a Skilled and Competent Project

Team.

Hypothesis 6: Project Manager's Leadership Qualities has positive impact on Information Technology Project Success

Hypothesis 6o: Project Manager's Leadership Qualities has no positive impact on Information Technology Project Success

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.213[a]	.046	.041	.64220

a. Predictors: (Constant), PMLQ

b. Dependent Variable: ITPS

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.250	1	4.250	10.304	.002[a]
	Residual	89.082	216	.412		
	Total	93.332	217			

a. Predictors: (Constant), PMLQ

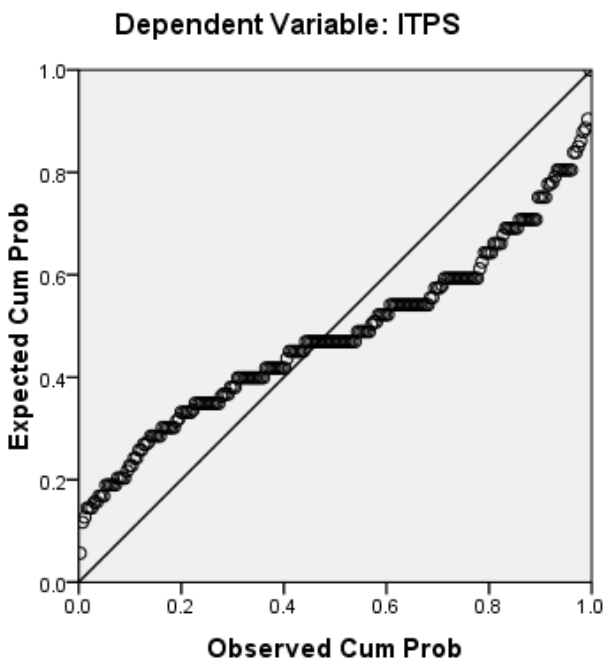
b. Dependent Variable: ITPS

Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.359	.525		4.495	.000
	PMLQ	.423	.132	.213	3,210	.002

a. Dependent Variable: ITPS

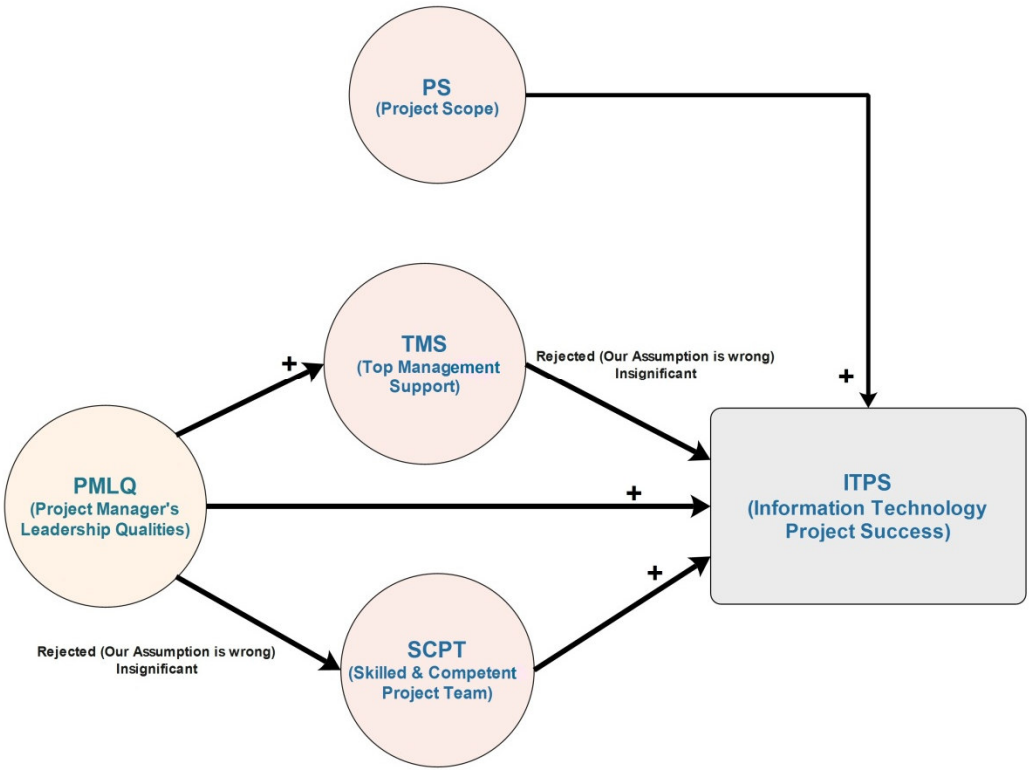
Normal P-P Plot of Regression Standardized Residual



The above table shows the regression analysis of "Project Manager's Leadership Qualities has positive

impact on IT Project Success". The regression analysis represents that R-square value for the relationship is R-square = 0.046, with F-statistic 10.304 and the significance value 0.002. Hence the null hypothesis is rejected and our assumption is true. IT Project Success can be predicted from the Project Manager's Leadership Qualities.

4.3 Tested Model:



5. Conclusion and Recommendations

5.1 Conclusion

After the detailed literature review regarding the success factors for IT projects; the CSF's of Cleary defined Project Scope, Skilled and Competent Project Team and the Project Manager's Leadership Qualities were identified. The research results obtained clearly indicated that the Project Manager's Leadership Qualities played a significant role in obtaining Top Management support in obtaining resources and other help, however, the Project Manager's Leadership Qualities did not play a role on the Skilled and Competent Project Team Members. Furthermore the clearly and well defined Project Scope from the onset of the project was found to be impactful on the outcome and was a contributing factor towards the IT Project Success. Top Management Support as a whole was not found to play a key role in the IT Project Success. The Skilled and Competent Project Team Members were identified to be the most contributing factor towards the success of the IT Projects followed by the Project Manager's Leadership Qualities, which was tested and found to be the second most impactful factor for IT Project Success.

5.2 Recommendations:

In light of the results obtained the following recommendations are made:

A skilled and competent IT project team is extremely essential for the successful implementation of IT projects in the Telecom industry. Organizations should therefore engage highly skilled team members who are well versed in the latest IT trends and can perform under pressure to meet deadlines. A dynamic and charismatic Project Manager is required to lead the complex and highly demanding IT projects towards successful completion. The leadership qualities of a Project Manager also plays a vital role in obtaining Top Management support when it comes to procuring resources and dealing with other project related matters; Telecom Organizations should therefore engage dynamic project leaders who are good communicators, can delegate tasks with ease, work under pressure and can effectively obtain resources to steer the IT Projects towards success. Telecom organizations should ensure that before undertaking any complex IT project, the scope of the project should be well defined so that the objectives of the project and the goals required to be achieved are made clear with no ambiguities. The exact requirements from the project should be properly communicated to all the team members and other stake holders. If the

organization is undertaking the project to implement new software program, the exact functionalities required from the software should be well defined and communicated to the project handlers.

This study was focused on IT projects undertaken in the telecom organizations in a limited geographical location; it is highly recommended that further research should be undertaken by widening the scope of the study. IT projects undertaken in other organizations worldwide should be studied and researched to further the study and find new CSF's for successful implementation of IT Projects.

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